

## CLAIMS

We claim:

1. An epitaxial growth furnace for effecting the formation of an epitaxial layer on the surface of a semiconductor wafer by supplying under a high temperature condition a source gas to a surface area of the semiconductor wafer, said surface area being subject to epitaxial growth within a sealed chamber of the furnace, said wafer being supported by a wafer holder within said chamber, wherein said wafer holder comprises:

an opening for exposing said surface area of the wafer;

an opening flange adapted for engagement with a chamfered tapered face of a whole peripheral edge of said wafer on the side of said surface area thereof; and

a plurality of jaw means adapted for detachably engaging with an outer periphery of the wafer on a back surface side of said surface area.

2. An epitaxial growth furnace according to claim 1, wherein the opening flange of said wafer holder is adapted to contact only with the chamfered tapered face of the whole peripheral edge of said wafer on the side of said surface area which is subject to epitaxial growth.

3. An epitaxial growth furnace according to claim 1, wherein each of said jaw means of said wafer holder further comprises spring means for thrusting each said jaw means toward a center of said opening, and detachable actuating means for locking each said jaw means in a released position against the thrust force from said spring means.

4. An epitaxial growth furnace according to claim 2, wherein each said jaw means includes an inclined face corresponding to a chamfered tapered face of the peripheral edge of the wafer on said back surface side thereof.